

## ABSTRACT OF THE DISCLOSURE

6 $\alpha$ -fluorpregnanes (I), where the dotted line between positions 1 and 2 represents a single or double bond; R<sub>1</sub> is OH, OCOR<sub>2</sub>, X, SO<sub>3</sub>R<sub>3</sub>, or an (R<sub>7</sub>)(R<sub>8</sub>)(R<sub>9</sub>)SiO- group, where X is halogen, R<sub>2</sub> and R<sub>3</sub> are C<sub>1-6</sub> alkyl or phenyl optionally substituted by C<sub>1-4</sub> alkyl, and R<sub>7</sub>, R<sub>8</sub> and R<sub>9</sub>,  
5 equal or different, are C<sub>1-6</sub> alkyl or phenyl optionally substituted by C<sub>1-4</sub> alkyl, can be obtained by means of a high stereoselectivity process comprising reacting a 3-(trisubstituted)silyloxy-pregna-3,5-diene (IV) with a fluorinating agent selected among N-fluorosulfonimides and N-fluorosulfonamides. The 6 $\alpha$ -fluorpregnanes (I) are intermediates for the synthesis of steroids useful as anti-inflammatory and anti-asthmatic agents.